Modeling the Conception of Truth

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There are those who maintain that there is one correct way to think about truth, though there is disagreement about what that way is. One attitude, deflationism, takes talk about truth to be no more than an auxiliary device. Another works in terms of propositions, precise determinate things formed in terms of more specific determinate semantic values, such as objects, properties and relations, where for example the proposition that John's height is six feet is true just in case the referent of ‘John’ has the property expressed by 'has a height of six feet'; and where a statement is true just in case it expresses a true proposition.

In this paper I take the very different stand that our conception of truth is a complex, many splendored thing, with many interrelated uses, evolving over time. We best understand it, as any complex object of study, with models, each of which, when successful, providing an illuminating delineation of important aspects of this complex concept, and none of which, in practice, will capture all of it exactly.

Two important desiderata for a model of truth is that it should be one on which many of our statements do qualify as true, and that it should be one that plays an important theoretical role in our understanding of how language functions to represent the world. But these two desiderata pull in different directions. The simple model of expressing a true proposition excellently serves as a useful theoretical device, but fairs badly when it comes to truth for statements that we can actually make. The problem is that a true proposition, and so a statement that express a true proposition, does not fail in any way in either precision or accuracy. But, in practice, we are not able to make statements that could not be improved in precision, accuracy, or both.

1. (Im)precision and (in)accuracy. To further delineate last claim let me introduce, however briefly these two kinds of limitations on our representational tools. Beginning with imprecision, my use of the term differs from the way ‘imprecision’ is often used in the sciences. In that technical usage has a value in the interval (3,9) counts as imprecise. In my usage this statement fragment counts as completely precise because, when completed with a subject term, it functions to pick out a completely determinate proposition, a proposition specifying a precisely described value interval. In my intended usage of ‘imprecision’ an expression counts as imprecise to the extent that it fails in specifying a completely determinate intended referent, property, relation, or proposition; and this even when all contextual factors have been taken into
account, eliminating ordinary ambiguity, filling in values for implicit parameters, referents assigned to indexicals, and the like. Thus, in contrast to the example of has a value in the interval \((3,9)\), has a value near to 6 counts as imprecise, as I intend the term. Below I will say a little more about how ‘precise’ is to be understood.

As for (in)accuracy, a representation is inaccurate insofar as there are discrepancies between the representation’s target and the way the representation represents the target as being. If the true value of a quantity is 6, characterizing that value as 5.9 is precise, but inaccurate.

Both inaccuracy and accuracy can come in degrees, but there is a usage of ‘accurate’ that picks out the limit degree: completely accurate. And likewise for precision.

Finally, I will reserve ‘inexact’ as a cover term for ‘imprecise and/or inaccurate’, and likewise ‘exact’ for ‘both precise and accurate.

2. The poverty of exact truths in science. Most of us have commonly believed that science provides us with many perfectly precise and perfectly accurate truths. A plausible line of reasoning supports this illusion: We think that we can discover determinate natural kinds and quantities, that we can directly attach words to these, in terms of which we can then formulate perfectly precise and accurate singular statements and general laws. But to date, none of this has happened.

I will illustrate with the special but particularly plausible case of fundamental physics. All fundamental theories in physics are idealizations, in particular idealizing the nature of the objects and quantities that they study. Take, for example, the quantity, mass. Newtonians though that the term ‘mass’ was univocal, referring to a perfectly determinate, unique natural quantity. But relativity blurred the distinction between mass and energy, energy itself being subject to the same sorts of problems. In the general theory of relativity, gravitation mass/energy isn’t even exactly localizable, and the general theory of relativity is itself an idealization. Quantum theories further complicate how to think about mass, as mass serves as a renormalization parameter: Mass is a relative quantity, relative to the way one relates to it. It is a real stretch to think that at any point yet has ‘mass’ been univocally attached to some completely determinate quantity.

We take science to provide the best of human representation and knowledge. If we have no perfectly precise and accurate statements in science,

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1 XXX This is supported in a little detail in () pp. ()
where else should we expect to find them?

Please note carefully that I am not claiming that science provides no truths. For example, I take it to be true that water is $\text{H}_2\text{O}$. But the statement that water is $\text{H}_2\text{O}$ is not a precise statement. What quantity of $\text{H}_2\text{O}$ must we have for it to count as a quantity of water? Do we mean 100% pure $\text{H}_2\text{O}$, of which there is none, and which, if there were any, would have significantly different properties than the stuff we call ‘water’? Do ice and water vapor count as water? At just what temperatures and pressures is $\text{H}_2\text{O}$ supposed to be water? I am claiming that science provide us with no statements that are both perfectly precise AND perfectly accurate.

I embrace the statement that water is $\text{H}_2\text{O}$ as true, because I take any potential inaccuracy in such a to be accommodated by its imprecision. This paper will begin an effort to understand what such accommodation involves.

3. A more general, circumstantial reason for suspecting that all of our representations fall short of being both completely precise and completely accurate. The world is extremely complicated. To succeed in getting around in it our native concepts as well as the ones we self-consciously fashion make all sorts of simplifications not exactly faithful to the facts. As is well known in the case of color, the concepts that arise through our perceptual capacities can be expected to use simplifications, shortcuts, what are strictly speaking distortions but that work well enough for our needs and more efficiently than would ones that apply with greater, to say nothing of complete, accuracy. We don’t need to delve into the complexities of cognitive psychology and brain science to expect that distortions that more than compensate in efficiency for what is lost in accuracy will occur throughout our information processing capacities. We can expect that our explicitly constructed common representations, just as their refinements in science, continue the representational strategies, complete with their distortions, with which nature already provides us.

The thought that there is ubiquitous distortion in our non-verbal representations suggests that the same sort of thing or something that compensates for it may go every bit as much for human verbal representation, that verbal representation ubiquitously involves some level of inaccuracy or, I shall argue below, some level of compensating imprecision. I am aware of one plausible, substantive exception: Our representation of combinatorial facts, logic, and the like, that we can collectively characterize as finite mathematics. But as soon as incompleteness results apply, problems about unintended interpretations compromise complete precision. (Henceforth I will take the exception of finite mathematics.

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2 In chapter II of his (2006) *Geire* provides a compelling summary of the grounds for the conclusion that color perception involves all kinds of shortcuts short of exact reflectancies of external objects.
4. A very different reason for concluding that virtually nothing we say is, literally, true: Braun and Sider’s “Vague so Untrue”. Braun and Sider’s “Vague so Untrue” (2007) presses a conclusion with much in common with what I am urging.

Braun and Sider argue that sentences, expressions, or utterances are rarely, if ever, either true or false. They start from the assumption that

…the properties, relations, and propositions that are candidates for being the meanings of linguistic expressions are precise. (134)

They help themselves to this assumption because it functions as a framework principle, presupposed throughout the enterprise of formal semantics. They continue with a factual claim for which they do not argue, but which will be granted by many:

[T]he facts that determine meaning (for instance, facts about use, naturalness of properties, and causal relations between speakers and properties) do not determine a unique property to be the meaning of ‘red’ [and likewise for expressions very broadly] (134)

From this fact and the two foregoing assumptions they conclude that

…therefore [there is] no unique proposition that a sentence containing ‘red’ expresses. (134)

Next they appeal to another unquestioned principle guiding formal semantics:

To be either true or false, a sentence must have a unique meaning [viz, express a unique proposition]. (134)

and conclude:

“So, on our view, utterances are rarely (if ever) true or false. (134)

QED

How, then, are we to understand the plainly unproblematic activity of making assertions and ascribing truth to utterances?

Speaking vaguely (as always), there is a range of legitimate disambiguations for a vague expression. … When all the legitimate
disambiguations of a sentence are true, call that sentence *approximately true*

They agree that

Truth (or perhaps known truth) is the norm of assertion. (135)

But

“[T]ruth is an impossible standard that we never achieve…[I]t would be pointlessly fussy to enforce this standard to the letter, requiring the (exact) truth…nor would it be desirable to try, for the difference between the legitimate disambiguations of our sentences are rarely significant to us. (135)

So it is usually harmless to ignore vagueness:

[O]rdinarily speakers typically and harmlessly ignore vagueness. And when doing so, it is reasonable to speak [not the truth, but, in our technical sense]...the approximate truth. (135)

5. Variation between Braun and Sider’s terminology and the terminology I will use. Braun and Sider talk indifferently about sentences, expressions, and utterances. Instead I will talk about statements, where by ‘statement’ I will intend our preanalytic idea of “what is said”, but without presupposing that what is said is something completely precise. To differentiate between sentences (expressions, utterances) and statements I will use single quotes to talk about sentences, expressions, and utterances, and italics to talk about statements. I will also use italics to talk about predicative fragments of statements, for example, *is six feet tall*. I don’t want to say that use of such notation expresses properties, as is often done in the literature, because I don’t want to presuppose that such expressions express anything determinate and completely precise. Instead I will understand italicized predicative expressions to be shorthand for talking generally about the statements that can be formed by completing such predicative fragments with a subject expression. Finally, I will reserve double quotes for use as “shudder quotes”.

Next, Braun and Sider use the term ‘vague’ broadly for the kind of semantic indeterminacy involved when, even after all resolution of ambiguity and when contextual factors have been taken into account, there still exist multiple equally good candidates for the meaning of an expression. (pp. 133-4)

Sometimes the term ‘vague’ is reserved for the special case of such indeterminacy that will support a sorites argument.³ I will follow this practice and

³ There may be questions about whether sorites-supporting imprecision really is a special case of the kind of imprecision that Braun and Sider intended with their
use ‘imprecision’ for the broader notion of linguistic representations that somehow fail to attach to a completely determinate and precise semantic value even when all relevant facts have been taken into account, where this use of ‘imprecision’ coincides with the intended use for the term introduced with examples in section 1. This usage has the advantage, not only of marking a useful distinction, but also of supporting the use of the antonym, ‘precise’. 

A final terminological variation. Braun and Sider use ‘disambiguation’ for the elimination of what they call vagueness and I am calling imprecision. I prefer to reserve ‘disambiguation’ for the resolution of the entirely different form of semantic indeterminacy of ambiguity. So, where Braun and Sider use ‘disambiguation’ I will use the term precisification taken from the closely connected methods of supervaluation.

6. Questioning Braun and Sider’s framework. Let’s summarize Braun and Sider’s argument, using this terminology.

1) Assume that semantic values, in particular propositions, are precise.

2) Assume that for a statement to be true is for the statement to express a true proposition.

\[\text{6. Questioning Braun and Sider’s framework.}\]

I believe that it is, in view of the kind of case discussed in section 8 below.

\[\text{4 I am here using essential Braun and Sider’s characterization. See their pp. 133-134.}\]

\[\text{5 Braun and Sider’s notion of approximate truth corresponds to the supervaluationist notion of “super-truth” – truth in all (legitimate) precisifications. Braun and Sider characterize the difference between their approach, using their notion of of approximate truth, and the supervaluationists’ use of super-truth by saying that they refrain from the supervaluationists’ identification of supertruth/approximate truth with truth. (pp. 144 ff.) I can add: Supervaluationism requires the qualification “legitimate” or “appropriate” to “all precisifications”, but this requirement then makes them run afoul of Braun and Sider’s requirement that truth be the expression of a determinate, true proposition: Since the qualification, “legitimate” introduces imprecision, supertruth cannot be a characteristic of a determinate proposition because no determinate proposition is selected. Braun and Sider do not have this difficulty because their notion of “approximate truth” is not identified with truth, so no determinate proposition need be selected.}\]
3) Further factual claim: Statements are always (or almost always) imprecise.

4) From 1) and 3): Statements do not (or rarely) express any proposition.

5) From 2), and 4): Statements are never (or rarely) true (or false).

We should consider turning this use of modes ponens into a modes tolens; Those who accept 1) and 3) but choke on conclusion 5) will reject 2): If one accepts 1) and 3), and then also takes many statements to be true, they must be true in some way other than by expressing a true proposition. Braun and Sider are working within a widely accepted framework according to which 1) propositions are precise and 2) for a statement to be true is for it to express a precise, true proposition. Thus those who reject conclusion 5) but accept 3) are committed to challenging this framework. Taking ‘semantic value’ as a term of art for which 1) is presupposed, such a challenge amounts to rejecting 2)

When a framework has proved broadly fruitful, as this one certainly has, it is idle to challenge it without offering an alternative. My project is precisely to begin sketching such an alternative, one that will, contrary to the conclusion of Braun and Sider, support the literal truth of many of our statements.

Before beginning, there is something I want to emphasize: I do not advocate giving up the familiar framework that includes presuppositions 1) and 2). The mystique of Kuhnian paradigm shifts to the contrary, science does not generally discard frameworks that have proven broadly fruitful. For example, Newtonian physics has hardly been abandoned. Rather, it thrives as an extraordinarily powerful theoretical tool, and not just for making predictions: Imagine trying to explain the terrestrial tides with the general theory of relativity! Nor has Newtonian mechanics been degraded to a merely useful framework because it has been superseded by true theories. Relativity and quantum theories are every bit as much idealizations as is Newtonian mechanics. Indeed, in science a wide range of idealized theories function in their own right in helping us to understand the world. Equally, the framework of formal semantics will continue to provide the best way of understanding many important features of language.

That statements can be true in some way other than by expressing a precise, true proposition provides a leading idea for constructing an alternative.

7. Literal truth that accommodates both imprecision and inaccuracy: simple cases. If truth of statements was simply the truth of an expressed

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7 As I argue in my (2004).
proposition, a statement being true would be inconsistent with its being inaccurate.

Of course, whether or not propositions are involved, it would be inconsistent to say that one and the same statement was both true AND inaccurate. But by looking for a way in which statements can be true other than by expressing a true, precise proposition, we can sidestep this inconsistency.

To see how this might work we can take inspiration from the evaluation of maps. In the case of maps there can be a tradeoff between imprecision and inaccuracy. In figure 1 [XXX FIGURE TO BE ADDED] we see a simple precise map. If you take out your ruler you will see that the distance represented between A and B is just ever so slightly larger than the distance represented between A and C. Let’s take this to be a map of distances A-B and A-C that are in fact equal, so that this precise map is every so slightly inaccurate. Indeed, in practice if you make any map precise enough it will fail of complete accuracy.

In figure 2 [XXX FIGURE TO BE ADDED] we see a second map, very like the first, except that the representations of distances have been made imprecise by making them fuzzy. This map does not give the distances A-B and A-C precisely. It shows them as close, but you would be very hard put to determine whether this second map represents the distances as precisely the same or perhaps slightly different. Metaphorically speaking, the inaccuracy of the first map has been "swallowed up" by the imprecision of the second map.

As for maps, similarly for statements. The idea of a completely precise and true statement corresponds to a map with complete precision and accuracy. In practice there are no such maps. And, in practice, no such truths. But where there is no inaccuracy within a statement’s level of precision we will take that absence of inaccuracy to constitute the truth of the statement. That is, we will interpret truth as absence of inaccuracy within a level of precision.

Here is a more specific, though still abstract description of the strategy. We will retain, as an idealization, statements thought of as precise and as expressing precise propositions. Idealizations are always false. But they can do the work of truths. We will then take a second kind of statement to be imprecise and true by virtue of reflecting, in the right way, the “truth work” accomplished by the corresponding precise but inaccurate statement. Metaphorically speaking, a statement can be, literal, true by virtue of its imprecision “smoothing over” the inevitable inaccuracy of its precise counterpart. In other words, the strategy will be to see precise but strictly speaking inaccurate statements and imprecise but literally true statements as two sides of the same semantic coin, as kinds of “semantic alter-egos”

To illustrate with a simple example: There are two ways (at least) of understanding the statement: John’s height is six feet. We can understand it as:
John’s height is six feet PRECISELY. But no one has a height of PRECISELY six feet. Nonetheless, if the discrepancy between six feet and John’s actual height properties doesn’t matter for current concerns this false statement functions as a truth. It will be important for what follows that functioning as a truth be understood as functioning as a truth with respect to the needs and interests of concern in the current context. When these circumstances obtain we will say that the conditions of application obtain for the false statement, John’s height is six feet, precisely.

But the statement, John’s height is six feet, can be understood as: John’s height is six feet CLOSE ENOUGH. In suitable circumstances this statement is, literally, true. What circumstances? Exactly the foregoing conditions of application for the false John’s height is six feet precisely. We want to use the conditions of application for false, precise statements to characterize the conditions under which the imprecise analog will qualify as true. Again, those conditions of application are those in which the false, precise statement nonetheless functions as a truth. If those conditions of application were to function as a truth in all logically applicable situations we would have back traditional, context independent precise truth conditions. But for John’s height is six feet, close enough to be true we must take into account: close enough for what? Clearly, one intends contextually indicated needs and interests. And this interpretation corresponds exactly to the way in which we characterized the idea of functioning as a truth in our discussion of the false, precise analog.

John’s height is six feet exactly and John’s height is six feet close enough together provide an example of what I will call ‘semantic alter-egos.’ The implication of ‘semantic alter-egos’ is that the two statements get the same representational work done, the one as a false precise statement that nonetheless can function as a truth, the second as an imprecise statement that can be, literally, true, true when the conditions of application for its precise semantic alter-ego obtain, the conditions under which the precise statement functions as a truth. By appealing to the idea of semantic alter-egos the ‘loose’ talk’ [XXX comparison with the “loose talk” literature?] under which one might apply ‘true’ to the precise statement has been absorbed into the imprecision of the imprecise statement. In this way we have consistently accommodated vagueness and truth, by shifting the burden of inaccuracy to imprecision. On this account, in the functioning of language inaccuracy and imprecision are intimately connected, adding some substance to the very old but nonspecific observation that vagueness, rather than a defect, is essential to the operation of language.  

Objection! Aren’t these “conditions of application” just a trivial renaming of “truth conditions” that are, again, precise without qualification? The objector

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8 In contemporary literature the idea goes back to Waisman (1951) and his idea of the “open texture” of language.
claims that, though perhaps very complicated, there are completely determinate facts about the context of use and the human needs and interests in that context. These facts will then support exact conditions under which a given statement functions as a truth with respect to the needs and interests in the context. Exactly these conditions, then, will be the claimed truth conditions for the statement in the context in which the statement is made.

No, there are no such completely determinate conditions, if only because human needs and interests are themselves not completely determinate. Consider: Exactly what stuff will satisfy your desire for chocolate ice cream? There will be cases in which you will say ‘yes’, cases in which you will say ‘no’, and, most likely, cases in which you will say ‘I’m not sure’. Should we in fact be automatons, there may be an account of our physical functioning that will predict under exactly which physical conditions we would say which one of these three things. But in some of the cases whether the response really reflects experienced satisfaction of the desire for chocolate ice cream will not be determinate. From the point of view of our interests, just where the line is drawn will be arbitrary, determined by things that, from the point of view of human interests, are irrelevant accidents. From the point of view of human interests, just where the line is drawn, in hard cases, will be determined case by case by decisions, decisions which, in really hard cases will be arbitrary, will be “don’t cares”, will be cases that just as well could have gone the other way.  

I believe that in fact similar comments apply very generally to the operation of the mechanisms by which we apply language to the world, and this again because of the ultimate imprecision of human interests. Suppose we are building a mechanism that sorts objects into those that we call ‘red’ and those we call ‘not red’, or equally, those we call ‘red’, those we call ‘not red’, and those of which we say ‘not sure’, or… The same kind of point presented in the text will apply in all these cases. Nature, the way our cognitive machinery actually applies ‘red’ to world, must operate by some mechanism. And ultimately it is just such mechanisms that fix the semantic function of ‘red’, fix the way the term actually gets applied. Unless you think that there is some ultimate Platonic form of “redness” (to which we anyway would have no access) there is no independent “standard. But both for each of us individually and for all in a language community collectively, such a mechanism won’t work with exact consistently case to case. There will always be small variations that, relative to language and our interests more broadly, will be completely arbitrary. For most cases such a mechanism will function unproblematically. But when problems of discrimination arise there will come a point at which, if we are forced to say ‘red’ or ‘not red’ or ‘not sure’ or… the choice will be completely arbitrary. This has obvious implications for the whole idea of borderline cases that I will briefly mention in section 13 below.
8. More difficult cases. Many cases will work as does the example of John’s height. But a great many more won’t. Consider the statement: John’s height is between three and nine feet. Suppose that we’ve measured John’s height by asking him to stand up against the door frame, measured him with the sewing drawer measuring tape, and the height comes out, near as we can tell, to six feet. In this case everyone is going to insist: The statement that John’s height is between three and nine feet is just plain true. Moreover, since a precise interval has been specified, there is no imprecision in the statement, as I am understanding ‘imprecision’. So, it seems, the foregoing account won’t work generally. Indeed the analysis will fail for all but pretty special cases.

But it is no more literally true that John’s height is between three and nine feet than it is literally true that the king of France is bald. There are no such things as (precise) heights of people. People’s heights go up and down around half an inch a day. If one attempted to refine to height at an instant of time (not what was intended, and in any case already an idealization) there are still problems with what gets taken in: What about variation in John’s posture, how much hair,… And if these aren’t enough there is always frame relativity of the special theory of relativity and problems about localization in quantum mechanics.…

Perhaps we should operationalize height. So doing will yield a statement that is accurate but open ended, and insofar inexact because imprecise: Means of measurement can never be specified with complete precision.

So at the level of presupposition – presupposition that there IS a height to be between three and nine feet - we will have reservations and options similar to those we had for John’s height is six feet. On the one hand we can think of this case in terms of a representation that is precise in every respect – not only is a precise interval, (3,9), in question, the quantity said to have a value in that interval is thought of as a completely determinate physical quantity that takes on any of a continuum of precise values. Because of the difficulties enumerated about height, and, we might add, similar difficulties with the use of the units term ‘feet’, so taken the statement does not correspond exactly to the way things are. Correspondence fails not because, as in the simpler foregoing case of six feet precisely a precise statement is positively inaccurate, but because there are no such things in the world, precise heights of people, that can be attributed a value in the interval (3,9). Nonetheless, thinking of the world, or, if you like, modeling the world, as characterized in this idealized way functions as a truth in virtually any of the circumstances in which we might be interested. So its conditions of applicability are virtually always satisfied. This idealized understanding of the

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10 This example should provide as much of a challenge to Braun and Sider’s account as to mine. I believe that Braun and Sider would give pretty much the same response that I am about to give when it is transcribed into their terms.
statement can be taken to be the precise member of a semantic alter-ego pair. Its imprecise alter-ego twin is the imprecise statement with an imprecise reading for ‘height’ (and similarly for the units, feet, and for the purported referent of ‘John.’) We can take this imprecise statement to be true just in case the conditions of applicability for it’s precise alter-ego are satisfied.

Other examples will fair similarly, such as ones critics have given me over the years: There are some people in this room. Water is \( H_2O \), there are bears in the Rocky Mountains….

The proposed analysis also enables us to see why such examples have always seemed to show conclusively that, in such cases, no qualification on “just plain true” could be required. In the (3,9) interval example, the interval specified is completely precise. And since the height in question is not, in the example, a borderline case, the vagueness or imprecision of ‘height’ seems just irrelevant: In this case we know that, whatever the inaccuracy there might have been in our measurement, the height will be in (3,9). But the imprecision of the term ‘height’ IS relevant because, borderline case or not, there is nothing in the world correctly characterized as the having of precise height of any value, and leaving the idea of height open-ended leaves the statement as not picking out any determinate proposition that might be true. This was just Braun and Sider’s leading point, and in this respect the present proposal follows in their footsteps. Finally, supervaluationism as a basis for exact truth is a chimera: It can’t work if “all precisifications” is taken literally – talking John’s precise height as two feet gives the wrong answer and is clearly not “legitimate”. Truth as supertruth has to be understood as all legitimate precisifications (as all proponents of supervaluationism acknowledge), but then Braun and Sider’s point applies again: No determinate proposition has been picked out, so, if truth of a statement is truth of the true proposition picked out by the statement, the statement is not true.

9. Two questions about the proposal. Above I have explained the idea of what I call ‘semantic alter-egos’, the idea that two statements that in their different ways do the same semantic work, the truth of the imprecise member of a pair corresponding to the conditions of application of the precise member, the

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11 While the exposition in the paragraph is all mine, the leading idea was suggested to me by correspondence with David Braun.

12 The following defect has no relevance for applications of supervaluationism that do not require exact truths.

13 Braun and Sider do not seem explicitly to raise this objection to the identification of truth with supertruth.
conditions under which the false, precise statement nonetheless functions as a truth. But given an imprecise statement, S, what is its precise semantic alter-ego?

In the end this is a scientific, not an interpretive question; though of course the vigor of the present proposal will turn on whether or not empirical work succeeds in developing these ideas in understanding, in concrete cases, how we apply language to the world. But not to make a mystery of the question, here are some suggestions:

Some imprecise statements wear their precise semantic alter-egos on their sleeves because we use same expressions in stating both alter-ego alternatives: John’s height is six feet (precisely, or close enough). Kansas is flat (precisely, or close enough)...

We can take the casual use of non-perceptually based physical predicates, such as ‘weights two pounds’, or ‘is water’ to be imprecise predicates the precise alter-egos of which are provided by the theories of these subjects. The theories generate models that we regard as precise, where questions about how these models apply to the world are questions about their conditions of application. It is just such conditions that, in turn, bear on questions about the objective truth of statements using the original casually used terms. Perceptually based predicates may work similarly.

XXX Aside: There is an obvious connection between what I am proposing and prototype accounts, a connection that I have not yet explored.]

A second wild card in the proposal as presented so far is the idea of functioning as a truth. How is this to be understood? A natural option (that need not be to the exclusion of others) is to appeal to the ways in which statements function as premises in arguments, where the notion of argument is drawn broadly, including both theoretical and practical arguments. and where the arguments in question often are not explicitly given but operate in our reconstructions of human deliberation. In a world perfectly adapted to human needs, true statements would never lead to problematic conclusions. Ours is no perfect world, but the idea caries over: A statement functions as a truth when, or to the extent that, when we use it as a premise in theoretical or practical arguments it tends to lead to conclusions that, when implemented in actions, objectively and in fact meet our needs and interests.14

14 In essence, I take this way of understanding ‘functions as a truth’ from Millgram’, though my exposition of the idea is entirely different from his [XXX I have to check out this reference in more detail.] Millgram works with what he calls “partial truths” and the idea that statements can be “partially true”. Nowhere [as far as I can remember in the book drafts – this has to be checked in the
10. Consideration of three apparent difficulties. There will be a number of objections to this way of implementing “functions as a truth” as a basis for the literal truth of imprecise semantic alter-egos.

Where we are concerned with a statement’s contribution to conclusions that are sound in practice when the statement is freely used as premise, can we make sense of that statement’s contribution as compared to the contributions, positive or negative, of other statements also used as premises? Clearly in practice this will be an extremely hard question. But I see no reason to think that it can’t be answered, in more or less detail, in specific cases. We have a closely analogous problem in discerning the contribution of parts to a complete functioning whole, a question we regard as perfectly intelligible and in many cases one we can answer. It would make as little sense to complain that there is an in principle difficulty in untangling contributions of various statements to the success of conclusions of arguments as it would be to think that there is no sense to be made of the contribution of functioning parts to the successful operation of an automobile engine or organs in the human body.

Since our needs and interests play a central role in the account one may worry whether it provides only an irredeemably subjectivist account of truth. Not at all. Standards play a central role in the account, and we set the standards. But it is not up to us whether or when those standards are met. Whether or not standards we impose are met in a given situation is a completely objective matter.

The way in which our needs and standards function in the account bridles truth with the question of whether statements “work”, which in turn suggests that we have here a version of pragmatism about truth. Indeed, the account falls in the pragmatist tradition. But standard ways of dispatching pragmatism do not apply. The account is not in any way an epistemic account of truth. And the familiar objection that many false statements “work” gets no grip, given how we have amplified on the idea of what it is for a statement to “work”. Literal truth of an imprecise statement does not correspond to its precise semantic alter-ego working in every respect, but only working with respect to the contextual set needs and interests. This in turn corresponds to the truth of things such as having a height of six feet close enough, to being flat enough, and much more generally to models that we use to get around in the world, being similar enough in relevant respects to the ways things actually are, ways that are too complicated to be humanly accessible in every detail.

[published version] does Millgram give an explicit characterization of what he means by “partial truth”. But in his wealth of examples, “functions as a truth” would seem to be a fair interpretation – indeed, I take from Millgram the idea of understanding “functioning as a truth” in terms of use as premises in arguments.
If we want to reduce what I am suggesting to a slogan that can be compared with the familiar sloggened version of pragmatism, instead of claiming that to be true is to work we claim that to be true enough is to work well enough. Lots of false precise statements nonetheless work well enough for the things that we care about, and when the imprecise semantic alter-egos are interpreted as tailored to those needs and interests we understand their literal truth as corresponding to the ways in which the precise versions are “true enough”\textsuperscript{15} In just this way the account gives us a natural way of understanding wherein lies the truth of a true but imprecise statement, something, as Braun and Sider reminded us, that is mysterious when we think in terms of precise truth conditions.\textsuperscript{16}

11. **Semantic contextualism.** I have been speaking of expressions being precise, and since in so doing have not qualified the ‘precise’, the wording suggests COMPLETELY precise. But I also want to claim, with Braun and Sider, that some level of imprecision occurs everywhere, if I had intended COMPLETELY precise my account would undermine itself. I don’t so intend. Rather, use of the unqualified ‘precise’ functions as expository convenience, simplification, idealization. My usage in these respects illustrates a very general and important circumstance: The way we talk, and even more strikingly, the way we think about our subject matters, all SEEMS to operate in terms of determinate truths, unqualified in any way by either imprecision or inaccuracy. How can this be if, as I claim, inexactness is ubiquitous?

To explain what I take to be going on, let me illustrate with one kind of epistemological contextualism that provides a useful analogy. We begin by supposing that responsible interlocutors only assert what they take themselves to have warrant to assert. But explicit justifications are thin on the ground. Given what one traditionally required of epistemic justification there appear to be few or none to be had. After centuries of efforts to develop foundations for epistemology, most of us have given up. Instead we recognize that in any discursive context we must start with some presumptions that are there taken for

\textsuperscript{15} Dewey scholars tell me that all of this corresponds well to Dewey’s intent. [XXX REFERENCE TO ELGIN]

\textsuperscript{16} In note 22 of chapter 4 [XXX check published version] Milgram distances his account of “partial truth” from pragmatism, in large part because he is thinking of pragmatism only as an account of exact truth, in particular an account that obscures the ubiquitous utility of departing from exact truth. One of the many differences between my account and Milgram’s is that by tying an understanding of imprecision to explicit truth, the present proposal makes the connection with pragmatism much more clear.
granted with respect to justification. But we do this in the spirit of defeasibility: The challenge of a problem may require critical examination of what had been taken for granted, of course, on the basis of some new presumptions.

The idea of a common ground for conversations\(^\text{17}\) provides a useful way of formulating such epistemological contextualism.\(^\text{18}\) For a conversation to go smoothly there needs to be a body of statements, “presuppositions”, that all participants in the conversation take for granted in the sense that all carry on treating the presuppositions as true. In particular, all participants take the conversation’s presuppositions for granted as not, for the purposes at hand, needing examination or justification. But accepting a proposition into the common ground proceeds in the spirit of defeasibility. If a participant calls a presupposition into question, the statement loses that status. On this model, all it takes is for one participant to express a worry.\(^\text{19}\) (Or such a participant may be rejected from the conversational circle with the remaining participants carrying on as before.)

How does a statement get into the common ground? In some cases a conversation takes a statement into the common ground because in conversation the statement has been given some justification, and all participants agree, if only passively, that the justification is sufficient. But all conversations must start somewhere, and so in practice a great deal will be taken for granted from the

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\(^{17}\) The idea goes back to Lewis’s (1979) For a contemporary exposition see Stalnaker. (2002) There is a huge contemporary literature on this subject I reject the idea that there is a uniquely correct development of the idea of “common ground”, but rather take the idea to function as a theoretical tool that can be variously fashioned to deal with various theoretical problems. In this spirit I provide my own sketch.

\(^{18}\) There is an extensive literature on epistemic contextualism that concerns (possible) contextual adjustment of the standards required for knowledge – my contact with that literature is through Ludlow (2005) and (2008). This is not the same as contextualism about what premises can be taken for granted. The tool of common ground ought to apply to both kinds of epistemic contextualism, but at this point I don’t know what literature there is on that. Please give me references.

There is also an extensive literature debating the application of the idea of common ground to the strategy of epistemic contextualism. For a recent contribution to this debate see Ludlow () and references therein.

\(^{19}\) The worry must be genuine, not “just for the purpose of illustration” or to make a pet philosophical point. Genuine worry can occur naturally when the stakes go up.
start. Either way, participants will freely use a presupposition whether it has been given an explicit justification or not.

It is important to the idea of common ground, and will be particularly important in my application, that a statement being part of the common ground does not require that all, or even any participants actually believe the presupposition. All that is required is that all are free to use the statement in the same way as they would if they did believe it. For example participants may recognize that a statement is false, but agree that, for the purposes at hand in the conversation, objectives will be best served by treating it as true, where by treating a statement as true I mean that one freely uses the statement as a premise in theoretical or practical arguments exactly as one would if one believed it to be true.

The idea of semantic contextualism holds that a very similar conversational attitude applies to issues of precision and accuracy. What one takes as common ground in a conversation includes, not only what one takes for granted with respect to justification, but also with respect to precision and accuracy. Again, in analogy to the case of justification, to take a statement into the common ground does not require more than treating it as if it were completely accurate and precise even if one suspects, believes, even positively knows that the statement could be qualified in one or both of these respects. (In this discussion I will sometimes use the cover term, ‘exact’ in the sense of ‘precise and accurate’). To treat a statement as exact is to be understood as adding to what it is to treat a statement as justified. When one takes a statement to be justified and exact one uses it freely as a premise in theoretical or practical argument. To treat a statement as justified and exact is to so use it whether or not one has some reservation in either of these respects. Conversely, to treat a statement as not exact is shown by explicitly stating the reservation when using the statement as a premise: Assuming as a premise that John is six feet tall, close enough, as opposed to assuming that John is six feet tall.

As for epistemic contextualism, semantic contextualism proceeds in the spirit of defeasibility. It is always open to participants to call a statement’s exactness into question. This can happen when no participants had previously so much as suspected any failure in exactness. On the other hand, if S was antecedently known or believed to be inexact, but participants had agreed

\[20\] Arthur Fine suggested this wonderful name for the idea.

\[21\] There is an obvious intersection here with the “loose talk” literature. I’ve yet to learn much about that literature, and not at all sure how much of that is worth going into here. Is there any appeal to the idea of common ground in the loose talk literature?
12. Conversations and common ground. Talk of conversations as involving common ground provides an ideal type or idealized model. It brings out the idea that, for people usefully to discuss a topic, there must be things, and usually a great deal, that they take for granted. But we must stay very flexible about what are the events that count as conversations or the groups that count as conversational groups. When a small group of people enter into what we would ordinarily call a conversation they bring from the larger context a great deal that they all presume. To the extent that people bring the same presumptions from a larger context, that larger context also, for our purposes, counts as a “conversation”. Conversations in this larger and quite open-ended sense can be delimited by people, by topics, even by cultures, and in all of these respects conversational groups can subsume or overlap with others.

We can use activity in science as a model or illustration of this broader and open-ended idea of conversations and conversational groups. Kuhn long ago make the point that to do interesting work in science a great deal has to be presupposed, and for scientists to work together, they must share a great many presuppositions. As a science student one learns what will be accepted as presuppositions in most discussions, or “conversations”, about the subject matter in question. If the subject is classical mechanics Newton’s laws of motion will function as presuppositions, in quantum mechanics, Schrödinger’s equation, and so on. Participants will then amplify the basic presuppositions of a broader discipline when they delve into more specific topics, illustrating the idea of one “conversation” being nested within another. In interdisciplinary work, there will be overlap of presuppositions, illustrating the way “conversations” may overlap.

So the idea of conversations and the presuppositions of a conversation recapitulates, on an interestingly smaller scale, a basic Kuhnian insight. [XXX Check whether this is already in the literature] I should hasten to add that other parts of the Kuhnian tradition do not fit so well. With rare exceptions it would be misleading at best to describe changes in conversational presuppositions as “revolutions” and when presuppositions do come up for examination they are most frequently debated on the basis of other, usually more encompassing “conversations”. Indeed, the traditional Kuhnian mystique to the contrary not withstanding, the whole idea of a “revolution” in science does not sit very well. The paradigm of Newtonian physics has been supplemented, not overthrown, by

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22 Lewis (1979, p. 352) in just a few words suggest something in the same ballpark of what I suggest here: “If a sentence is true enough (according to our beliefs) we are willing to assert it, assent to it without qualification, file it away among our stocks of beliefs, and so forth.”
relativistic and quantum theories: As I have commented earlier, classical mechanics continues to operate as the discipline of choice for a great range of problems and bears on explanation every bit as much as prediction. Likewise for conversations in a more conventional sense.

Let me return to the role that common ground is playing in our discussion. I have been urging an alternative to thinking about truth as truth of a precise proposition. But truth of a precise proposition seems most apt when we see ourselves using statements as if they were, not just justified, but just as we would if they should be both completely precise and completely accurate. The model of conversations and conversational presuppositions enables us to see how and why traditional ways of thinking about truth are, for a great range of purposes, the natural, effective, and productive way of thinking about representational success for statements.

To understand clearly the role of common ground in making it natural to talk in terms of precise statements and presuppositions let me recapitulate the structure of the overall proposal. As a matter of contingent fact, none of our verbal representations that we actually use are exact, that is both completely precise and completely accurate (possible exceptions in finite mathematics aside.) When a statement is true, I am suggesting, it is in virtue of its imprecision successfully and objectively covering over the inaccuracies in its precise semantic alter-ego. Truth of a statement consists in its idealized precise semantic alter-ego – objectively! – functioning as a truth. The appeal to conversation and common ground then functions to help us in understanding why it nonetheless appears that our truths are “just plain true”, are statements that do not suffer in any way with respect to either precision or accuracy. Statements that have been taken into the common ground are used, for the scope of the conversation, just as they would be if they were precise and accurate without qualification.

13. Methodology: Recapitulation of the status of the proposal. Though usually not explicitly stated, a widespread attitude towards discussion of truth, as towards so many subjects, would predominantly appear to be: Find the one right account that will serve all purposes, that will itself be the TRUE account of truth. If the standard of success in such an account is complete precision and complete accuracy, we are imposing a standard that is NEVER met in science. Why should we expect that such a standard could be met in giving an analysis of truth? We can well imagine worlds that would be simple enough for cognitive beings to employ statements that were exact. As a matter of contingent fact, ours is not such a world, at least not for the statements we have today or in any future in which the limitations of our representational resources generally resemble the limitations we have today.

In this situation we can expect, not just one, but quite possibly more than one usefully idealized way of understanding our subject. Let me illustrate with a
simple analogy. How should we understand the bulk properties of water? It is hopelessly beyond our reach to calculate these properties from some more “fundamental” theory, such as quantum mechanics or quantum field theory; and any such theory that we now have is itself severely idealized. Instead, we offer idealized models, and different ones for understanding different aspects of water. If you want to understand wave phenomena and how water flows through pipes, idealize water as a continuous medium – use a hydrodynamical idealization. On the other hand, if you want to understand features of water such as dispersion and the behavior of electrolytes, idealize water as a collection of discrete individual particles - use a statistical mechanical idealization. These idealizations do more than just facilitate calculating predictive numbers. They provide real understanding of the features and behavior of water.

Similarly, standard formal semantics that idealizes with precise semantic values provides wonderful understanding of important features of the structure of language. On the other hand, it makes no pretense of providing, is not at all designed to provide, understanding of most issue concerning application of the basic semantic values to the world. Thus the idea of truth as success for inexact statements, understood with the device of semantic alter-egos, is intended as a framework for dealing with a central problem of worldly application: How can we some how get things right when the world is too complicated for humans, even with the tools of science, ever to achieve verbal representations that are both perfectly precise and perfectly accurate? To begin to answer this kind of question I am suggesting an account that works in terms of models built with what we could call the precept or model building principle of semantic alter-egos, an account that is intended to complement, not to supplant, more familiar ways of thinking about truth.

Along the way the present account throws into relief the idealized status of those more familiar approaches. We do well always to remember the idealized status of any of our accounts because we sometimes get into trouble when we forget that an account IS an idealization. So forgetting involves what I call the “point particle disaster”: Physics wonderfully addresses a huge range of questions by idealizing objects as point particles. Now imagine a philosopher looking on and agonizing about the question: Well if objects ARE point particles, how come the appear so extended?!

I expect that some seemingly intractable problems about truth are “point particle disasters”, artifacts of forgetting the idealized status of all our accounts of truth. Likely suspects include: Struggling to determine which, if either, correspondence or redundancy accounts of truth are “right”. Problems about

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23 In as much as “pragmatics” is concerned with various features of language application these considerations should lead us to expect no uniquely correct “semantics/ pragmatics” distinction.
borderline cases, and vagueness generally. To illustrate the kind of thinking I have in mind, consider that “functions as at ruth” will have lots of indeterminate cases. Nor can we expect that there will be a sharp contrast between determinate and indeterminate cases. Recall the comments on the role of indeterminate personal values in such issues. One can try to model such indeterminacy with a hierarchy of borderline, borderline borderline.... cases, but this rather looks to be an example of modeling gone wild. The structure of sorites cases possibly aside, such modeling would appear to provide precious little by way of understanding facts about language and how we use it, and even in the case of sorites paradoxes, thinking in terms of idealization that has been misplaced might work better than the more familiar approaches. Adequate to our explanatory needs, and much more straightforward, to take what will count as an indeterminate, or borderline case as something that we negotiate as part of the common ground, and leave it at that. [XXX reference to Raffman?]

I want to be more cautious about the semantic paradoxes. Whether or not the semantic paradoxes, or analogs, will arise for literally true, imprecise statements will have to wait until we work out the account in a good deal greater detail. Nothing said here contravenes the way the paradoxes arise within the idealization of completely precise semantic values within a language with unlimited self-referential capacities. But what should our attitude towards that fact be?

Once more I suggest that we look to science as a guide. In model building in science consistency is always an important desideratum. But in physics it is not a strict requirement. Using inconsistent model building principles within one larger subject matter is a common practice, as the example of hydrodynamic and statistical mechanical idealizations illustrates. For a more narrowly focused example, Dirac delta functions were used for decades despite their inconsistent status within the models in which they were used. We now can provide a more elaborate model building structure in which the inconsistencies are eliminated, but in practice, no one in physics bothers: The more elaborate structures are prohibitively cumbersome to use and positively get in the way of understanding. Analogously, as all will agree, for the intended questions we get on swimmingly with our idealized semantic theory despite the problems of the semantic paradoxes. At the same time, and as the example of Dirac delta functions also illustrates, it is a worthwhile goal to further develop the framework without inconsistency. But the methodology that I am advocating recommends a very different attitude towards such efforts than the one often sees: It is fruitless to argue which consistent development is the “right” one. Instead, we should evaluate all suggestions for strengths and weaknesses and only discard the ones with little to offer.

24 And and the sketch concerning indeterminate facts about functioning of mechanisms generally mentioned in note 7.
There are other places where forgetting the idealized status of an attitude towards truth leads to the point particle disaster. Elsewhere I have elaborated how remembering the idealized status of standard approaches to truth can illuminate the issue of rationality of theory change (2008), about what it is to give “the ontology” of a theory (2004a), and about how to understand “natural laws” (2004b). “Confirmation theory” and understanding explanation are two further likely candidates. I suspect that we will discover much more.

The methodology that I have been urging depicts the following status for the proposal that I have sketched. It gets certain features of the concept of truth more accurately than the conventional idea. How do we squeeze truth out of our imperfect representations? What is it for a limited statement correctly to apply in our complex world? Among other things, by showing how we can look at the conventional approach to truth as an idealization, it helps us to see certain problems about truth, and some issues in philosophy more broadly, as instances of the point particle disaster. The present proposal has its own limitations. It obscures the combinatorial features of language. It would be utterly unwieldy to apply it to understanding most practical conversations. More generally, it will have to be evaluated for its own strengths and weakness, and, most importantly it is subject to refinement in BOTH precision and accuracy. The present proposal is not presented as an account that is, to the exclusion of all others, uniquely TRUE! Instead it promises to provide a productive alternative way to think about how we verbally represent the world, a way that enables us to understand some important things particularly clearly.25

References


25 The published version of this paper is going to need an appendix discussing the relation between the present account and that of Millgram’s “partial truth” in his Hard Truths. We are dealing with the same phenomena, but, I think, in entirely different ways.


Wainsmann (1951) May be in The Formation of Concepts in Modern Mathematics

Millgram footnotes

1) Lije’s discussion of “functions as a truth”: similarities and differences from mine

2) What does Lije mean by “partial truths? Is this ever explicitly discussed, or does he rely exclusively on examples to give it content

3) Comparison of Lije and my discussion of pragmatism

4) Generally, what is the relation of Millgram’s account and mine?